

Dynamical Magnetic Response of UAl_2

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Earlier work on the spin dynamics of UAl_2 * reported a broad quasi-elastic line with a linewidth varying from 25 to 35 meV between 15K and 300K. We have used inelastic neutron spectroscopy to re-examine the dynamical magnetic response of UAl_2 with improved energy resolution. The form of the response is more complex than previously reported. There is an inelastic component peaking near 30 meV at low temperatures and a rather narrow quasi-elastic component that grows in strength with increasing temperature. We will attempt to relate the form of this response to the bulk susceptibility and to the resistivity, which shows spin fluctuation behaviour, unlike most other U- and Ce based Kondo lattice systems.

*Loong et al., Physica 136B (1986) 413